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Scarification and Concrete Core Sampling Procedures – American Airlines LAX Transformer Removal

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These procedures address the planned surface scarification and confirmatory sampling of a concrete pad which formerly supported a PCB-containing transformer, located at the American Airlines operations at Los Angeles International Airport (LAX) (7001 World Way West).

The area identified for scarification includes the footprint of the transformer, a one-foot boundary around the footprint of the transformer, the estimated area of a small transformer oil spill (approximately one foot by four feet in size), and a one-foot boundary around the spill area. The objective of the concrete scarification is to remove approximately ¾ -inch to 1-inch of slab surface.

Following scarification, confirmation sampling will be performed through core sampling. Locations of concrete core samples have been determined using the Pacific Northwest National Laboratory's Visual Sample Plan (VSP). This is a software tool that supports the development of a defensible sampling plan based on statistical sampling theory and the statistical analysis of sample results to support confident decision making. VSP was used to determine the number of samples needed to identify the extent of potential PCB contamination to a 95% confidence level, with an assumption of no false negatives. Hot spot analysis was performed using a presumed elliptical hotspot with a size of one foot (semi-major axis) by 0.8 feet (semi-minor axis). The semi-major axis was chosen to match the semi-minor axis of the aforementioned spill (approximately 1 foot). Twenty-eight (28) samples will be collected in a triangular grid pattern, with a maximum spacing of 1.68 feet between samples. Additionally, two concrete core samples will be collected from the westernmost edge bordering the scarified area.

II. Personnel Qualifications & Contact Information

Concrete scarification will be performed by ARCADIS or by ARCADIS' subcontractor, Special Industrial Services (SIS). Core sampling activities will be conducted by an experienced ARCADIS field specialist in accordance with this document and a site-specific/project-specific Health and Safety Plan (HASP). Collected samples will be delivered under chain of custody protocol to TestAmerica Laboratories (TA) located in Irvine, California for PCB analysis. Key American Airlines and ARCADIS project personnel and their contact information is listed below:

Name/Company	Role	Phone (cell)	Phone (office)
Matt Worthington / ARCADIS	Field Specialist	714-730-9052	714-269-4739

Michael Asakawa / ARCADIS	Project Manager	949-887-3743	949-450-7903
Laura Curtis / ARCADIS	Senior Regulatory Specialist	810-922-9012	810-225-1903
George Cebula / ARCADIS	Construction Coordinator	315-708-4091	858-278-2716
John Cueto / American Airlines	Environmental Coordinator	310- 462-7283	310-646-4420
John Haney / American Airlines	Corp. Environmental Specialist		817-931-2765

III. Equipment List

- Personal protective equipment (PPE), including respirators, in accordance with the site-specific HASP
- Portable generator (if needed)
- Hand-held electric rotary hammer drill
- Bushing tool attachment (for concrete scarification)
- One-inch diameter drill bit (for concrete sampling)
- Shop vac equipped with HEPA filter
- Paper plates
- Aluminum foil
- Alcanox, hexane and distilled water, in spray bottles (for drill bit decontamination)
- Laboratory-provided sample vials
- Indelible ink marker or paint pen
- Project notebook
- Camera
- Chain-of-custody forms
- Shipping containers
- 55-gallon closed-top drum(s) (for waste containerization)

IV. Health and Safety Considerations

Field activities associated with the concrete scarification and PCB core sampling will be performed in accordance with this document, the site-specific HASP, and applicable Job Safety Analyses (JSAs). Copies of the above-referenced documents will be present at the site during implementation of the filed work. Required PPE will be donned by field personnel as specified in the HASP. Caution will be used when handling any glass containers to prevent spillage, breakage and potential hand injury. Refer to the appropriate JSAs for a list of critical actions and associated potential hazards.

Activities will be conducted near live electrical equipment, including an electrical panel approximately two feet away from the scarification area. In order to ensure a safe working environment, an underground utility survey will be conducted to determine the presence of live lines. Additionally, careful manual exploration of the immediate soil along the side of the concrete slab will be performed to further assure conduits are not running into and beneath the proposed work area.

V. Concrete Scarification and Sampling Procedures

1. Concrete Scarification:
    a. Mark horizontal limits of the area to be scarified on the concrete slab surface. Refer to Section IX of this document for the outline of the area to be scarified.
    b. Observe adjacent electrical equipment and underground utility markings to avoid direct contact with the equipment, and to maintain horizontal distance from the live underground conduit connected to the live electrical equipment located immediately west of the area to be scarified.
    c. Connect rotary hammer drill with bushing attachment and shop vac with HEPA filter to a power source (e.g., electric outlet or portable generator). If a generator is to be used, place the generator outside of the enclosed substation area.
    d. Scarify upper ¾-inch to 1-inch layer of the concrete slab located within the pre-determined horizontal limits. Concurrently, vacuum airborne dust and debris generated during the scarification activities. The vacuuming will be conducted by placing the inlet of the shop vac's suction hose immediately near the area being scarified.
    e. Place collected dust and debris into 55-gallon closed-top drum(s). Collect any larger pieces of debris that could not be vacuumed (if any) and place the debris into the drum(s).
    f. Upon completion of the concrete scarification and dust/debris collection, place the shop vac into the drum together with generated dust/debris and disposable PPE for subsequent off-site disposal as assumed PCB-containing waste.

g. Decontaminate the bushing attachment as described under Item 3 below.

2. Concrete core sampling. The sampling will be implemented after completion of the concrete scarification.

   a. Determine proposed sampling location per Section IX of this document. Mark proposed sampling locations on the slab surface.

   b. Observe adjacent electrical equipment and underground utility markings to avoid direct contact with the equipment, and to maintain horizontal distance from the live underground conduit connected to the live electrical equipment located immediately west of the area to be sampled.

   c. Mark 7½-centimeters (approximately 3 inches) depth on the drill bit using paper tape. The tape marking will guide depth of each sampling hole to be drilled.

   d. Connect coring device to a power source (e.g., electric outlet or portable generator). If a generator is to be used, place the generator outside of the enclosed substation area.

   e. For each sample:

      i. Drill into sampled material to a pre-determined depth of 7½ centimeters or to refusal, whichever is encountered first.

      ii. Collect pulverized material using dedicated paper plates or aluminum foil. Place the material into a laboratory-provided container for subsequent shipment to the laboratory for analysis.

      iii. Photograph sample location. The photograph name must include the sample ID.

      iv. Decontaminate the drill bit as described under Item 3 below.

   f. Complete chain-of-custody forms, label shipping containers, and deliver samples to the analytical laboratory (TA) for analysis. Samples will be analyzed for PCBs using USEPA SW-846 Method 8082.

   g. Documentation shall be in accordance with Section VII below.

3. Equipment Decontamination. Non-disposable equipment that comes in direct contact with potentially contaminated concrete/dust/debris, including the bushing attachment and drill bit, will be decontaminated using the following protocol.

   a. Alconox (or equivalent) detergent solution wash;

   b. Tap water rinse;

   c. Hexane rinse (pesticide grade or better);

   d. Distilled water rinse; and

   e. Allow to air-dry.

   f. Wrap in aluminum foil if it is not going to be used immediately.

VI. Waste Management

Disposable equipment including the shop vac, dust, debris, used PPE, decontamination waste, and excess material generated during the sampling activities will be collected and placed into Department of Transportation- (DOT-) approved steel drums (or other appropriate waste containers), which will be staged in accordance with site-specific procedures. The waste materials will be shipped for off-site disposal as assumed PCB regulated waste at US Ecology landfill located in Beatty, Nevada or at other waste disposal facility permitted to accept this type of waste.

VII. Data Recording and Management

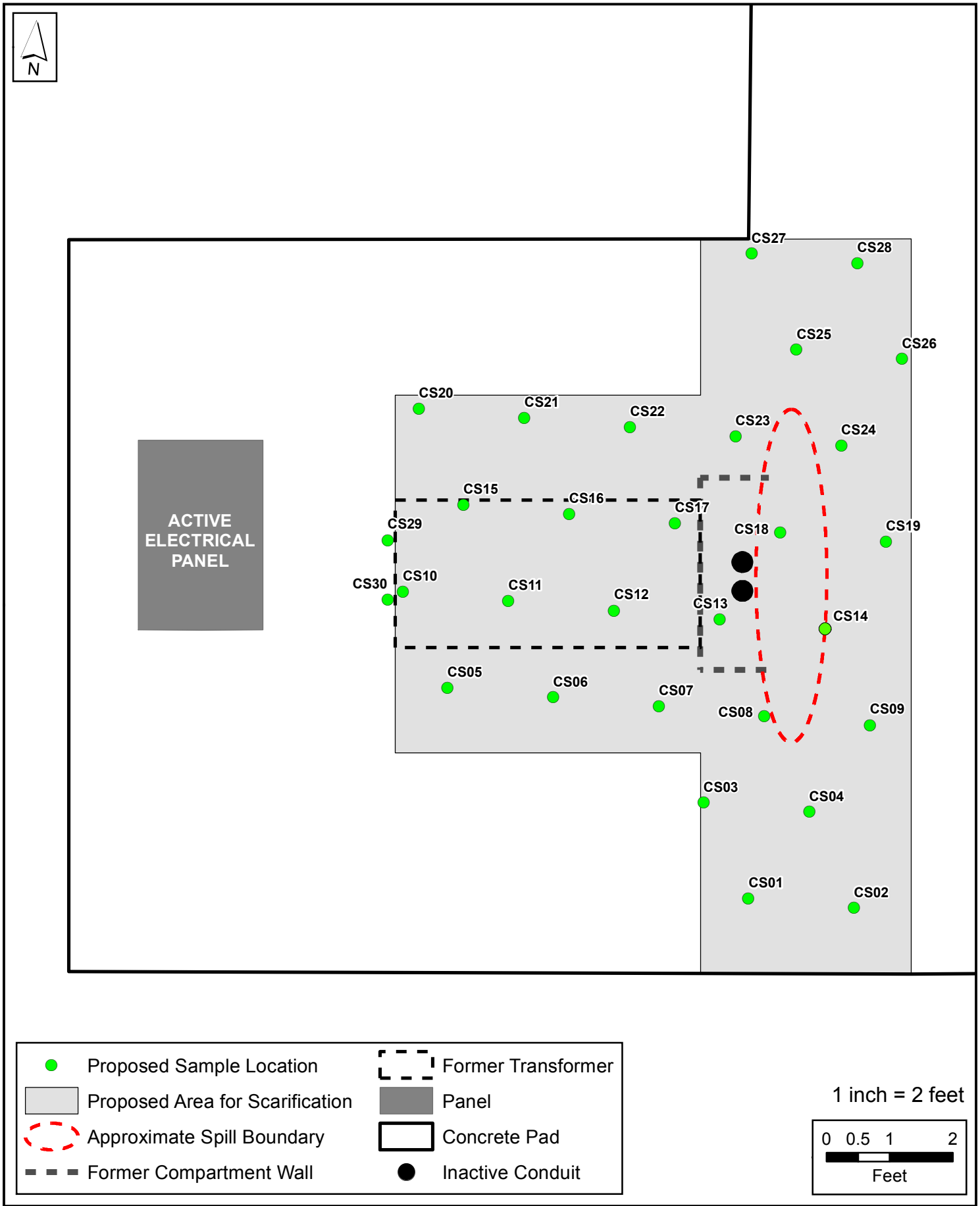
Concrete core sampling activities will be documented in a field notebook. Pertinent information will include personnel present on site, times of arrival and departure, significant weather conditions, timing of sampling activities, location of samples, sample collection procedures, and applicable analysis for each sample. Digital photographs will be stored on a secured network drive. The photograph number and description will be recorded in the field notebook.

VIII. Quality Assurance

Field personnel will measure the scarified area and compare to the outline presented in this plan in order to confirm scarification objectives were obtained; the depth of scarification will also be measured to ensure between 3/4-inch and 1-inch of the slab surface material has been removed.

During each day of concrete core sampling activities, an equipment blank will be collected and analyzed for total PCBs in order to ensure that de-contamination procedures are effectively minimizing potential cross-contamination between samples.

IX. Proposed Locations of Scarification and Concrete Core Samples



ARCADIS

PROPOSED SCARIFICATION AND CONCRETE CORE SAMPLE LOCATIONS
AMERICAN AIRLINES LAX
7001 WORLD WAY WEST, LOS ANGELES, CA